

Sub A1

SEQUENCE LISTING

(1) GENERAL INFORMATION

- (i) APPLICANT: The Government of the United States of America, as represented by the Secretary, Department of Health and Human Services; UAB Research Foundation; and Wisconsin Alumni Research Foundation
- (ii) TITLE OF THE INVENTION: NOVEL IMMUNOTOXINS AND METHODS OF INDUCING IMMUNE TOLERANCE
- (iii) NUMBER OF SEQUENCES: 15
- (iv) CORRESPONDENCE ADDRESS:
- (A) ADDRESSEE: NEEDLE & ROSENBERG, P.C.
 - (B) STREET: 127 Peachtree Street, N.E., Suite 1200
 - (C) CITY: Atlanta
 - (D) STATE: GA
 - (E) COUNTRY: USA
 - (F) ZIP: 30303-1811
- (v) COMPUTER READABLE FORM:
- (A) MEDIUM TYPE: Diskette
 - (B) COMPUTER: IBM Compatible
 - (C) OPERATING SYSTEM: DOS
 - (D) SOFTWARE: FastSEQ for Windows Version 2.0
- (vi) CURRENT APPLICATION DATA:
- (A) APPLICATION NUMBER:
 - (B) FILING DATE: 05-MAR-1998
 - (C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
- (A) APPLICATION NUMBER: 60/019,987
 - (B) FILING DATE: 05-MAR-1997
- (viii) ATTORNEY/AGENT INFORMATION:
- (A) NAME: Spratt, Gwendolyn D.
 - (B) REGISTRATION NUMBER: 36,016
 - (C) REFERENCE/DOCKET NUMBER: 14014.0287/P
- (ix) TELECOMMUNICATION INFORMATION:
- (A) TELEPHONE: 404 688 0770
 - (B) TELEFAX: 404 688 9880
 - (C) TELEX:

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 3476 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

AAAAAAAAAGC	CCGCCGAAGC	GGGCTTTTATT	ACCAAGCGAA	GCGCCATTTCG	CCATTTCAGGC	60
TGCGCAACTG	TTGGGAAGGG	CGATCGGTGC	GGGCTCTTC	GCTATTACGC	CAGCTGGCGA	120
AAGGGGGATG	TGCTGCAAGG	CGATTAAGTT	GGGTAACGCC	AGGGTTTTTCC	CAGTCACGAC	180
GTTGTAAAC	GACGGCCAGT	CGGTAATACG	ACTCATTAA	GGCCTTGACT	AGAGGGAAGA	240
TCTGGATGCA	TTCGCGCGCA	CGTACGGTCT	CGAGGAATTC	CTGCAGGATA	TCGTGGATCC	300
AAGCTTCACC	ATGGGAGACG	TCACCGGTTT	TAGAACCTAG	GGAGCTCTGG	TACCCACTAG	360
TGAGTCGTAT	TACGTAACCG	CAGGTAAAAG	GCATATTTT	CGCGTGTCTAT	GGCTAGTAAA	420
TAACACCGGT	GTCATTTAGA	GTCAGGGAAA	GACAATGAAA	AACGAAGAAA	GCCACCGGGC	480
GGCAACCCGA	TGACTTTCGC	TTATCACCCA	GCACACACCT	GGGAGAAATC	ACGGTCATGA	540
GTTTACAGAC	TCATGCGCAG	AATGGGCACA	CTAAAAACCC	TACCCGCGTC	GAGCGCGACC	600
GTGGTGGACT	GGACAACACC	CCAGCATCTG	CCAGTGACCG	CGACCTTTTA	CGCGATCATC	660
TAGGCCGCGA	TGTACTCCAC	GGTTCACTCA	CACGAGACTT	TAAAAAGGCC	TATCGACGCA	720
ACGCTGACGG	CACGAACTCG	CCGCGTATGT	ATCGCTTCGA	GACTGATGCT	TTAGGACGGT	780
GCGAGTACGC	CATGCTCACC	ACCAAGCAGT	ACGCCGCCGT	CCTGGTCGTA	GACGTTGACC	840
AAGTAGGTAC	CGCAGGCGGT	GACCCCGCAG	ACTTAAACCC	GTACGTCCGC	GACGTGGTGC	900
GCTCACTGAT	TACTCATAGC	GTCGGGCGAG	CCTGGGTGGG	TATTAACCCA	ACTAACGGCA	960
AAGCCAGTT	CATATGGCTT	ATTGACCTTG	TCTACGCTGA	CCGTAACGGT	AAATCTGCGC	1020
AGATGAAGCT	TCTTGACAGC	ACCACGCGTG	TGCTGGGTGA	GCTTTTAGAC	CATGACCCGC	1080
ACTTTTCCCA	CCGCTTTAGC	CGCAACCCGT	TCTACACAGG	CAAAGCCCCT	ACCGCTTATC	1140
GTTGGTATAG	GCAGCACAAC	CGGGTGATGC	GCCTTGGAGA	CTTGATAAAG	CAGGTAAGGG	1200
ATATGGCAGG	ACACGACCAG	TTCAACCCCA	CCCCACGCCA	GCAATTCAGC	TCTGGCCGCG	1260
AACCTATCAA	CGCGGTCAAG	ACCCGCGGTG	AAGAAGCCCA	AGCATTCAAA	GCACTCGCCC	1320
AGGACGTAGA	CGCGGAAATC	GCCGGTGGTC	TCGACAGTA	TGACCCGGAA	CTTATCGACG	1380
GTGTGCGTGT	GCTCTGGATT	GTCCAAGGAA	CCGCAGCAGC	CGACGAAACA	GCCTTTAGAC	1440
ATGCGCTTAA	GACTGGCCAC	CGCTTGCGCC	AGCAAGGCCA	ACGCCTGACA	GACGCGACAA	1500
TCATCGACGC	CTATGAGCAC	GCCTACAACG	TCGCACACAC	CCACGGCGGT	GCAGGCCGCG	1560
ACAACGAGAT	GCCACCCATG	CGCGACCGCG	AAACCATGGC	AAGGCGCGTG	CGCGGGTATG	1620
TCGCCCAATC	CAAGAGCGAG	ACCTACAGCG	GCTCTAACGC	ACCAGGTAAA	GCCACCAGCA	1680
GCGAGCGGAA	AGCCTTGGCC	ACGATGGGAC	GCAAGGCGCG	ACAAAAAGCC	GCACAACGCT	1740
GGAAAACAGA	CCCCGAGGGC	AAATATGCGC	AAGCACAAAG	GTGCAAGCTT	GAAAAGACGC	1800
ACCGTAAGAA	AAAGGCTCAA	GGACGATCTA	CGAACTCCCG	TATTAGCCAA	ATGGTGAACG	1860
ATCAGTATTT	CCAGACAGGG	ACAGTTCCCA	CGTGGCTGTA	AATAGGGGCA	GAGGTAGGAG	1920
TCTCTCGCGC	CACGGTTGCT	AGGCATGTCG	CGGAGGTAAA	GAAGAGCGGT	GACTATCCGG	1980
ACGTTTAAGG	GGTCTCATAC	CGTAAGCAAT	ATACGGTTCC	CCTGCCGTTA	GGCAGTTAGA	2040
TAAAACCTCA	CTTGAAGAAA	ACCTTGAGGG	GCAGGGGAGC	TTATATGCTT	CAAAGCATGA	2100
CTTCCTCTGT	TCTCTAGAC	CTCGCAACCC	TCCGCCATAA	CCTCACCGAA	TTGTGGGCCA	2160
TCGCCCTGAT	AGACGGTTTT	TCGCCCTTTG	ACGTTGGAGT	CCACGTTCTT	TAATAGTGGA	2220
CTCTTTGTTCC	AAACTGGAAC	AACACTCAAC	CCTATCTCGG	GCTATTCTTT	TGATTTATAA	2280
GGGATTTTGC	CGATTTCCGC	CTATTGGTTA	AAAAATGAGC	TGATTTAACA	AAAATTTAAC	2340
GCGAATTTTA	ACAAAATATT	AACGTTTACA	ATTTAAATAT	TTGCTTATAC	AATCTTCCTG	2400
TTTTTGGGGC	TTTCTGATT	ATCAACCGGG	GTAAATCAAT	CTAAAGTATA	TATGAGTAAA	2460
CTTGGTCTGA	CAGTTACCAA	TGCTTAATCA	GTGAGGCACC	TATCTCAGCG	ATCTGTCTAT	2520
TTCGTTTCAT	CATAGTTGCC	TGACTCCCCG	TCGTGTAGAT	AACTACGATA	CGGGAGGGCT	2580
TACCATCTGG	CCCCAGTGCT	GCAATGATAC	CGCGAGACCC	ACGCTCACCG	GCTCCAGATT	2640
TATCAGCAAT	AAACCAGCCA	GCCGGAAGGG	CCGAGCGCAG	AAGTGGTCCCT	GCAACTTTAT	2700
CCGCCTCCAT	CCAGTCTATT	AATTGTTGCC	GGGAAGCTAG	AGTAAGTAGT	TCGCCAGTTA	2760
ATAGTTTGGC	CAACGTTGTT	GCCATTGCTA	CAGGCATCGT	GGTGTACGC	TCGTCGTTTG	2820
GTATGGCTTC	ATTACAGTCC	GGTTCCCAAC	GATCAAGGCG	AGTACATGA	TCCCCCATGT	2880
TGTGCAAAAA	AGCGGTTAGC	TCTTCGGTTC	CTCCGATCGT	TGTCAGAAGT	AAGTTGGCCG	2940
CAGTGTTATC	ACTCATGGTT	ATGGCAGCAC	TGCATAATTC	TCTTACTGTC	ATGCCATCCG	3000
TAAGATGCTT	TTCTGTGACT	GGTGAGTACT	CAACCAAGTC	ATTCTGAGAA	TAGTGTATGC	3060
GGCGACCGAG	TTGCTCTTGC	CCGGCGTCAA	CACGGGATAA	TACCGCGCCA	CATAGCAGAA	3120
CTTTAAAGT	GCTCATCATT	GGAGAACGTT	CTTCGGGGCG	AAAACCTTCA	AGGATCTTAC	3180
CGTGTTTGA	ATCCAGTTTC	ATGTAACCCA	CTCGTGACCC	CAACTGATCT	TCAGCATCTT	3240
TTACTTTTAC	CAGCGTTTCT	GGGTGAGCAA	AAACAGGAAG	GCAAAATGCC	GCAAAAAAGG	3300
GAATAAGGGC	GACACGGAAA	TGTTGAATAC	TCATACTCTT	CCTTTTTTCA	TATTATTGAA	3360

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GCATTTATCA GGGTTATTGT CTCATGAGCG GATACATATT TGAATGTATT TAGAAAAATA 3420
AACAAATAGG GGTTCGCGC ACATTTCCCC GAAAAGTGCC ACCTGACGTA GTTAAC 3476

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GACATCCAGA TGACCCAGAC C 21

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 58 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

CCTCCCGAGC CACCGCCTCC GCTGCCTCCG CCTCCTTTTA TCTCCAGCTT GTGTCGCC 58

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 56 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

GCAGCGGAGG CGGTGGCTCG GGAGGGGGAG GCTCGGAGGT GCAGCTTCAG CAGTCT 56

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

GCAAGCTTGA AGACTGTGAG AGTGGTGCCT TG 32

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 37 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GTCTCTTCAA AGCTTATTGC CTGAGCTGCC TCCCAA

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(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

GCATCTAGAT CAGTAGCAGG TGCCAGCTGT GT

32

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 59 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

CGGTCGACAC CATGGAGACA GACACACTCC TGTTATGGGT ACTGCTGCTC TGGGTTCCA

59

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GTACTGCTGC TCTGGGTTCC AGGTTCCACT GGGGACATCC AGATGACCCA G

51

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 67 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

123.

ATGAAATACC TATTGCCTAC GGCAGCCGCT GGATTGTTAT TACTGCGCTG CCCAACCAGC 60
GATGGCC 67

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 54 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

ATGAAATACC TATTGCCTAC GGCAGCCGCT GGATTGTTAT TACTGCGCTG CCAA 54

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 59 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

GGATTGTTAT TACTGCGCTG CCAACAAGCG ATGGCCGGCG CTGATGATGT TGTTGATTC 59

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CGGTACTATA AAACCTCTTTC CAATCATCGT C 31

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GACGATGATT GGAAAGAGTT TTATAGTACC G 31

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

AGATCTGTCG A/CTCATCAGC TTTGATTTC AAAAAATAGC G

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